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Today's Topics:
                          Keps for the Moon
                      STS-58 Mission Lifts Off

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 18 Oct 1993 18:02:40 GMT
From: telesoft!garym@uunet.uu.net
Subject: Keps for the Moon
To: ham-space@ucsd.edu

In <750600011.AA00149@afarm.uucp> Ron.Parsons@f40.n382.z1.fidonet.org (Ron
Parsons) writes:
>I need a set of 2-line Keps for the Moon.
>Ron W5RKN

I've been told that Keps are not sufficient to descirbe the orbit of the
Moon. My understanding is that a Keplerian Element set could be made that
would be valid for a short while (days?) but would quickly drift.

The problem is that the mass of the Moon is *significant* with respect to
the Earth so the center of it's orbit is not at the center of mass of the
Earth. Keplerian element sets (or is it the programs that interpret them?)
don't work for this situation, they were designed for cases where the mass
of the satellite is insignificant compared to the Earth. All man-made
satellites (so far :-) have a mass that is insignificant relative to the
Earth's mass.

--GaryM
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SB SAREX @ AMSAT $STS-58.002
STS-58 SAREX Mission Lifts Off

The STS-58 mission commenced today with a spectacular liftoff amid sunny
skies at the Kennedy Space Center. Liftoff of the Space Shuttle Columbia
was 10 seconds late due to an intruding aircraft in the expected Shuttle
flight path. As a result, liftoff occurred at 14:53:10 UTC. The primary
objective of this 14 day, high inclination (39 degrees) flight is to perform
human and animal life science experiments as part of the Spacelab Life
Sciences-2 (SLS-2) payload. Also on board is the Shuttle Amateur Radio
Experiment (SAREX).

The following represents the latest Keplerian Element set as generated by
Gil Carman, WA5NOM, of the Johnson Space Center.

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STS-58
1 00058U          93291.67759365  .00119475  00000-0  26040-3 0    88
2 00058  39.0114 128.6506 0007676 272.4217  87.5676 15.96123499    22
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Satellite: STS-58
Catalog number: 00058
Epoch time:      93291.67759365   =    (18 OCT 93   16:15:44.09 UTC)
Element set:     008
Inclination:       39.0114 deg
RA of node:       128.6506 deg              Space Shuttle Flight STS-58
Eccentricity:     .0007676                  Prelaunch Element set JSC-008
Arg of perigee:  272.4217 deg         Launch:  18 OCT 93  14:53:10 UTC
Mean anomaly:      87.5676 deg
Mean motion:    15.96123499 rev/day           Gil Carman, WA5NOM
Decay rate:     1.19475e-03 rev/day^2     NASA Johnson Space Center
Epoch rev:               2
Checksum:              327
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Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group

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Jay Maynard, EMT-P, K5ZC, PP-ASEL | Never ascribe to malice that which can
jmaynard@oac.hsc.uth.tmc.edu      | adequately be explained by stupidity.
 "I liked [OS/2] so much, in fact,  that I went to work for the company.
           I couldn't afford to buy it." -- Steve Withers

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End of Ham-Space Digest V93 #59
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